APPENDIX.

FOREST RULES.

IT is the desire of the Government of Bombay that in future supplies of timber should be cut by the officers of the Forest Department, and collected in convenient depôts where it will from time to time be sold by public auction under the rules that may be in force. In this way people will be able to procure timber at the sales, but it is necessary to make provision so that the people of the district may have the means of getting wood, bamboos &c. which they may require for their own wants, and not for purposes of trade. The following rules regarding permits to cut wood &c. on Government land are therefore published:

I. The people may, in accordance to customary usage, cut and collect in the Government forest of their own villages, when not specially reserved for the growth of timber or other conservancy purposes, the following sorts of forest produce: (1) Bamboos of sorts; (2) Junglewood for small houses, huts, chuppers, cattle-sheds &c.; (3) Dry wood for fuel; (4) Leaves and grass for manure &c.; (5) Thorns and brushwood and stakes for hedges and dams; (6) Wood for agricultural implements; and (7) Dead sago and other palm-trees for water-courses &c. excepting always squared timber for houses of a superior description, planks for solid wheels of carts, wood for rice-grinding mills or the rollers of sugar-mills, and any other descriptions that may from time to time be prohibited.

They must not trade with the wood &c. so cut and must not cut or destroy any trees of the kind excepted under section 5. The headman, *pátil*, and accountant, *kulkarni*, will be responsible that this rule is not abused. In the case of villages within the boundary of which there is no forest, an adjacent tract beyond the boundary will be set apart for the use of the villagers (this they must take great care of, as they will not get any more when this is exhausted), who must, however, before resorting to it, produce before the *pátil* or other officer in charge of it, a permit from their own village officer.

II. Except in such villages as the Collector, acting in concurrence with the Conservator of Forests, may exclude from the operation of this rule, owners and cultivators of land are permitted to clear away all small brushwood and thick low jungle within fifty feet of the boundaries of their cultivated land, so as to secure their cattle from the depredations of wild animals, and they may use the brushwood and small wood cut for their own purposes, but this provision does not extend to any trees of the nature specified in Rule V.

III. Except as provided for in the above two sections, no one is to cut wood of any description in any Government land in Kánara without a permit in writing from the *mámlatdár* or *mahálkari* of the district, and any one found cutting wood &c. without such permit will be liable to be prosecuted according to law.

IV. Persons requiring permits should apply to the *mámlatdár* or

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mahálkari of the district, stating the quantity and the description of the wood, the purpose for which it is required, and the number of trees required, and depositing the fees according to the rates which may be in force. A form of permit to cut is annexed.

1. Teak.
2. Sandal.
3. Blackwood.
4. Ebony.
5. *Honi*, Pterocarpus marsupium.
6. Poon, *surhoni*, Calophyllum elatum.
7. *Mátti*, Terminalia tomentosa.
8. *Balghay*, Vitex altissima.
9. *Karimutal*, Ougeinia dalbergiodes.
10. *Shivani*, Gmelina arborea.

Any other which may from time to time be added.

V. Permits for cutting the trees noted in the margin shall not be given without the special sanction of the Collector, and for cutting these special rates will be imposed and from time to time, as found necessary, fixed by the Collector in communication with the Conservator of Forests.

VI. Subject to the conditions of Rules XXIV. to XXVII. and if the fees are less than Rs. 25 (£2 10*s.*), and the *mámlatdár* or *mahálkari* sees no objection to the grant, he may give a permit. If the fees are more than Rs. 25, he should report the case to the Assistant Collector with his opinion. The Assistant Collector may sanction the issue of any permit the fees on which do not exceed Rs. 60 (£6), provided that no person shall be permitted to cut more than 50 *khandis* (625 cubic feet) of squared timber within ten years without the special permission of the Collector. The Collector shall not sanction the issue of any permit in excess of 100 *khandis* (1250 cubic feet) without a previous reference to the Revenue Commissioner through the Conservator of Forests. For every grant of more than fifty *khandis*, it shall be competent for the Conservator, in communication with the Collector, to exact special rates not exceeding twice the ordinary rates in force.

VII. A register shall be kept of all applications in each village, and no permit shall be granted till the register shall have been examined and it shall appear that applicant has had no grant within a reasonable period, and that he is *bonâ fide* in want of timber for the purpose indicated.

VIII. Permits should be granted as soon as possible after the date of application, and should be issued for as short a period as is consistent with the facilities of cutting the timber. The permits should specify the number of trees to be cut and the village *phirka* or forest in which the wood is to be cut, and due intimation should be given to the *pátil* and *kulkarni*; the exact trees to be cut will be pointed out to the applicant by the forest subordinates deputed for that purpose.

IX. Permission will not be given except in emergent cases to cut timber from the 31st of May to the 31st of October.

X. No person should continue to cut after the expiry of the time mentioned in his permit, but he should, if necessary, apply for an extension of time.

XI. The person to whom a permit is granted should report to the *pátil* or to the *mámlatdár* or *mahálkari* as soon as he has cut the number of trees specified in the permit and the wood is ready for measurement, and no wood should be taken away from the forest till it has been measured and stamped with the permit mark (S).

XII. The wood will be measured after being squared, except in the case of bamboos, firewood, and poles, and in measuring it, all logs of $\frac{1}{4}$ *khandi* ($3\frac{1}{8}$ cubic feet) and upwards, and all branches capable of producing logs of that size will be estimated. If the total quantity is less than that entered in the permit, another tree or trees will be pointed out, or the difference of the fees will be returned to the grantee. If the tree pointed

out to the applicant yield a greater quantity of timber than that permitted, the excess will be charged. This measurement or stamping of the timber cut on permit, will be done by a fit and responsible subordinate of the Forest Department.

XIII. When any person has received a permit under Rule IV. he must not use the timber for any other purpose than that assigned in the application for permit, and if he is found so using it, it will be liable to confiscation, and after enquiry such case should be reported to the Collector, who will, if he considers it necessary, pass orders for confiscating the wood and for prohibiting that person from ever receiving a permit under these rules.

XIV. The whole or part of the fees will be remitted in the following cases :

1*st*.—Works of public utility : (1) village *chaukis* or offices ; (2) village schools ; (3) *dharmsháláş* or rest-houses ; (4) covers, fences &c. of public wells ; (5) bridges over *nálás* and water-courses ; (6) works of *bonâ fide* public utility when paid for by private contribution or out of local funds not particularised above.

2*nd*.—Repairs of village churches, temples, *maths* or monasteries, mosques, and grants for religious edifices not the property of individuals but public as regards whole sections of the community.

3*rd*.—Reconstruction of houses injured or destroyed by fire, flood, or similar calamity, if the houses so injured or destroyed belong to persons paying revenue to Government or their tenants, or to lowly paid Government servants. Construction of houses which Government servants may be obliged to erect in consequence of their being stationed at newly established revenue and police stations where there is not sufficient house accommodation.

4*th*.—In cases of distress or poverty not coming under the above heads, the Conservator is authorised to remit the permit fee to the amount of Rs. 15 (£1 10*s*.).

XV. The Assistant Collector or Deputy or Assistant Conservator of Forests will have authority to remit the fees up to Rs. 15 in any one case. All cases in which a larger sum is to be remitted should be reported for the orders of the Collector, or, if necessary, of the Revenue Commissioner or Government.

XVI. The number and date of the order for remission should be noted on the back of each free permit and the full value of the fees should be credited to the forest revenue, corresponding debit being made of the sum remitted.

XVII. The owners or occupants of lands which have not paid revenue to Government from a date anterior to 1st January 1844 may purchase the right of ownership in the timber growing in their fields on application to the Collector, who, in concert with the Forest Officer, will fix its value.

XVIII. All timber passing in or through the district of Kánara without a pass or *rahádári* from some officer authorised to give passes will be liable to detention for enquiry.

XIX. The *mámlatdárs* or *mahálkaris* or any subordinate forest officer having special sanction will give passes or *rahádári* for all timber carts on application and after enquiry.

XX. When timber &c. is to be exported beyond the inland frontiers of the district above the Ghâts the *mámlatdár* or *mahálkari* or any subordinate forest officer having special sanction will give a pass on *green paper* which must be exchanged at the appointed frontier *náka* for a similar

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pass on *white paper*. Passes on *white paper* will not be effective for passing timber at any of the stations in Kánara, but are only of use in other districts. Forms of these papers are annexed (B and C).

XXI. All wood &c. bought at public sales (Revenue, Magisterial, Civil, or Forest) is entitled to a pass for export.

XXII. Passes for export may also be issued for wood &c. granted on seigniorage and converted to the use for which it was originally granted when it is desired to export it, provided that such wood when sold to outsiders should be charged on export an additional fee of fifty per cent on the seigniorage paid or remitted at the time of cutting.

XXIII. This additional fee may be reduced or remitted by the Collector or his Assistants or Deputies in cases of wood so exported when it is given for charitable purposes or where the grantee moves his abode to another district.

XXIV. Permits to cut wood in the Government forests will not be granted to any persons who are able without difficulty to supply themselves with the timber or other articles they require from the timber depôts.

XXV. In the event of any villager to whom by usage a permit to cut in the Government forests would have been granted being refused a permit on account of the proximity of a timber depôt, such person may, at the Collector's discretion, be excused from the necessity of purchasing his timber by public auction, and it may be issued to him from the depôts on payment of a price calculated to cover the cost of cutting and carting (including superintendence) and the seigniorage fees of the district as may from time to time be fixed, these fees, but not the cost, being remitted in cases coming under Rule XIV.

XXVI. Permits to cut wood in the Government forests will not be given to cultivators who have many suitable trees other than fruit trees (which are excepted) standing in their own estates.

XXVII. Whenever it is discovered that large and valuable trees have been cut down without permission in the Government forests adjoining any village or town and there is a clear and reasonable presumption that such trees must have been cut with the cognizance of such villagers or townspeople, and they fail when called upon to supply any information which may lead to the apprehension of the actual depredators, then section 37 of Regulation XII. of 1827, which is printed below, will be put in force:

'When robbery has been committed within the boundary of a village, or the perpetrators of a robbery have been satisfactorily traced thereto, and neglect or connivance be charged against the inhabitants or the police establishments with regard to prevention, detection, or apprehension, it shall be competent to the Magistrate to investigate the matter as a criminal offence, and if the fact be well substantiated, to exact a fine not exceeding the value of the property lost, the whole or part of which may be awarded in compensation to the owner, according as the degree of caution and activity which he evinced on the occasion may deserve.'

W. PEYTON, Major,
Conservator of Forests, Southern Division.

A. R. MACDONALD,
Collector of Kánara.

Bombay Castle, 18th October 1879.

No. 5587.—In exercise of the power conferred by Section 75 of the Indian Forest Act, 1878, the Governor in Council is pleased to make the following subsidiary rules:

1. One-half of the proceeds of fines and confiscations under the Act shall be paid by way of reward to the officers and informers through whose instrumentality the conviction was obtained, or the property liable to confiscation was discovered: provided that the Magistrate who tries any case under the Act may, if he thinks fit, direct that a larger amount than one-half shall be so paid.

When more persons than one are entitled to the reward under this rule the Conservator of Forests shall determine the proportions in which it shall be divided amongst them.

2. No person who holds land on which trees are growing which are the property of Government shall cut, lop, or in any way injure any such tree, or knowingly and wilfully permit any other person to cut, lop, or in any way injure the same without having first obtained the permission of the Collector, or, in the case of the teak, blackwood, or sandalwood trees, of the Conservator of Forests.

By order of His Excellency the Honourable the Governor in Council,

J. B. PEILE,
Acting Chief Secretary to Government.

Bombay Castle, 20th October 1879.

No. 5587A.—In exercise of the power conferred by section 51 of the Indian Forest Act, 1878, the Governor in Council is pleased to make the following rules concerning the collection of drift and stranded timber:

1. Any person may collect timber of any of the descriptions set forth in section 45 of the Act, and, pending the bringing of the same to the proper depôt for the reception of drift timber, may keep the same in his own custody, but he shall report his having done so within twenty-four hours to the nearest forest officer.

2. Any person may register in the office of the Conservator of Forests one or more boats for use in salving and collecting timber, on payment of a fee of one rupee for each boat.

Such registration shall hold good for the period of one year only, but may be repeated from year to year.

3. Every person, whether a forest officer or not, who collects any such timber shall be entitled to receive a recompense equal to fifteen per cent of the estimated value of the timber. Such estimate shall be made by any forest officer not lower in rank than an Assistant Conservator of Forests, whom the Conservator specially authorizes in this behalf, and the recompense shall be paid at once by Government:

Provided that when the timber has been recovered by means of a boat registered for use in salving and collecting timber, the person who collected it shall be entitled to receive a recompense equal to twenty-five per cent of its estimated value, and that in special cases the Conservator may increase the amount of the recompense to a sum not exceeding fifty per cent of the value of the timber collected.

4. If the timber collected shall be proved to be the property of any person other than Government, such person shall be liable to pay to Government under section 50 of the Act the following amounts (viz.):

(1) on account of salving and collecting, the actual amount of recompense paid to the person who collected it;

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(2) on account of moving, the actual cost incurred in moving it to the depôt for the reception of drift timber;

(3) on account of storing, such fees as shall from time to time be fixed by the Conservator of Forests, with the previous sanction of Government, for the storing of timber at such depôt.

5. No person other than a forest officer authorized in this behalf by the Conservator of Forests shall mark any timber, or have in his possession any hammer for marking any timber to which these rules refer.

6. Any person who breaks Rule 1 or Rule 5 shall be punished with imprisonment for a term which may extend to six months, or fine which may extend to five hundred rupees, or both.

By order of His Excellency the Honourable the Governor in Council,

J. B. PEILE,
Acting Chief Secretary to Government.

Bombay Castle, 9th August 1880.

No. 4133.—Under the provisions of section 41 of the Indian Forest Act No. VII. of 1878, His Excellency the Right Honourable the Governor in Council is pleased, with the previous sanction of the Government of India, to make the following rules for regulating the transit of timber and other forest produce:

1. All words used in these rules and defined in Act VII. of 1878 (The Indian Forest Act) shall be deemed to have the meaning respectively attributed to them by the said Act.

2. No timber or other forest produce, shall be moved into or from any of the districts in the Presidency of Bombay mentioned in Appendix A except by the routes therein respectively specified.

3. No timber or other forest produce shall be moved within any district of the Bombay Presidency, except within the limits of a reserved forest (whether a village forest or not) or of a protected forest,

and, except as is hereinafter otherwise provided, no timber or other forest produce shall be moved from or into any such district,

without a pass from a Conservator of Forests, or from some officer empowered by a Conservator of Forests, or from some person duly authorized under Rule 13 to issue such pass, nor otherwise than in accordance with the conditions of such pass:

Provided that nothing in this rule shall be deemed

(*a*) to apply to timber or forest produce which is the property of Government, or

(*b*) to apply to timber or other forest produce, the property of one person, or the joint property of two or more persons, which is conveyed in quantities not exceeding one head-load once in twenty-four hours, or

(*c*) to require a pass for the removal of any timber or other forest produce within the limits of the village in which it was produced.

4. Every pass issued under the last rule shall specify

(1) the name of the person to whom such pass is granted;

(2) the quantity and description of timber or other forest produce covered by it;

(3) the places from and to which such timber or other forest produce is to be conveyed, and the route by which it is to be conveyed;

(4) the period for which such pass is to be in force;

(5) the officer to whom it is to be returned on the expiry of such period, or on the arrival of the timber or other forest produce at its destination, whichever event happens the first.

5. In the case of timber or other forest produce which it is wished to import otherwise than by sea from any place beyond the frontier of British India, no pass shall be issued under Rule 3 unless upon production of a 'Foreign Pass' covering such timber or other forest produce, nor, if such timber be of large scantling, unless it bears a Foreign-Property mark.

6. Every such Foreign Pass must be in a form and every such Foreign-Property-mark must be of a description which has been registered in the office of the Conservator of Forests of the Division into which it is sought to import such timber, or forest produce, and such Foreign Pass must bear the signature of some officer or other person whose name has been duly registered in the said office as an officer or person duly authorized to sign such passes.

7. Any timber or other forest produce which it is wished to import otherwise than by sea from any place beyond the frontier of British India may be conveyed within such frontier by any of the routes named in Appendix A as far as the first depôt on such route established under Rule 15, without a pass under Rule 3, if it is covered by a Foreign Pass in proper form and duly signed and if in the case of timber of large scantling, it is marked with a registered Foreign-Property-mark, but not otherwise.

No such timber or forest produce shall be stacked, or deposited in any place between the frontier and such depôt, or be moved beyond such depôt without a pass issued under the said rule.

8. If the Conservator of Forests of the Division shall so direct, no timber of large scantling, which has been imported as aforesaid by any particular route, shall be moved beyond such first depôt without first having a Government transit mark of such description as the said Conservator shall prescribe stamped upon it.

9. In respect of every pass issued under Rule 3 there shall be payable such fee, if any, as the Conservator of Forests shall, from time to time, prescribe with the previous sanction of Government, for each district, and no such pass shall be issued until the fee so prescribed has been paid.

10. No person who belongs to a community to which a village forest is assigned and no inhabitant of a town or village in the vicinity of a protected forest, who is permitted to take timber or other forest produce from such forest for his own use, shall be entitled to receive a pass under Rule 3 for the removal of timber or forest produce from such forest to any place beyond the limits of the town or village in which such person resides:

Provided that in the district of Kánara a pass may be issued for moving from the said district any timber which has been given, on payment of the fees to be hereafter prescribed, for a specific purpose, and has been used by the grantee for that purpose,

but only on payment of an additional fee of fifty per cent on the amount of the fee originally paid, if such timber is being moved by any person other than the original grantee,

unless the Collector, or the Conservator of Forests, or any of their Assistants or Deputies to whom an application may be made in this behalf, shall be satisfied that such timber is being moved for charitable purpose and shall be of opinion that such additional fee should be reduced or remitted,

in which case a pass may be granted either without additional fee or on payment of a reduced fee, as the Collector or other officer aforesaid shall determine.

11. In every other case the owner of timber or other forest produce shall be entitled to receive a pass for the same under Rule 3 for any of the purposes for which such passes may be granted

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12. In the district of Kánara passes under Rule 3 for the moving of timber or other forest produce beyond the inland frontier of the said district will be issued in duplicate, one white and one green, and the date of exit will be recorded upon each of such duplicate passes by the forest officer at the appointed watch-house on the frontier, and the green pass shall be surrendered by the holder thereof to such officer, who shall return it without delay to the office from which it was issued.

13. The Conservator of Forests may, if he thinks fit, at any time, by an order in writing,

(*a*) authorize any person who is an owner of timber or other forest produce, or the agent of any such owner, to issue passes under Rule 3 in respect of any timber or other forest produce which belongs to such person or to the person for whom such person is agent, and

(*b*) cancel such authorization.

When the Conservator of Forests authorizes any person under clause (*a*) of this rule he shall furnish such person from time to time with authenticated books of blank printed forms of passes with the particulars required by clauses (4) (5) and (6) of Rule 4 already filled in, and no alteration shall be made by such person in any of the said particulars, or if made, shall have any validity.

The said person shall pay for each such book such sum as shall from time to time be determined by the Conservator of Forests, and in the event of an order being passed by the Conservator of Forests under clause (*b*) of this rule, shall at once return to the said Conservator every unused book and every unused portion of any such book then remaining in his possession, and shall be entitled to receive back the amount paid by him in respect of such unused book or portion of a book.

No pass issued by any such person after the issue of an order under clause (*b*) of this rule and no pass issued by him which is not on a form supplied to him as aforesaid, shall have any validity.

14. Timber or other forest produce in transit may be stopped and examined at any place by any forest or police officer if such officer shall have reasonable ground for suspecting that any money which is payable to Government in respect thereof has not been paid, or that any forest offence has been or is being committed in respect thereof.

The person in charge of any such timber or other forest produce shall furnish to any such officer all the information which he is able regarding such timber or other forest produce, and if he is removing the same under a pass shall produce such pass, on demand, for the inspection of such officer, and shall not in any way prevent or resist the stoppage or examination of the said timber or other forest produce by such officer:

Provided always that no such officer shall vexatiously or unnecessarily delay the transit of any timber or other forest produce which is lawfully in transit, nor vexatiously or unnecessarily unload any such timber or other forest produce or cause the same to be unloaded for the purpose of examination.

15. The Conservator of Forests may establish at such convenient places as he shall think fit on the routes by which timber or other forest produce may lawfully be conveyed, depôts to which such timber or other produce shall be taken for all or any of the following purposes (viz.):

for examination previous to the grant of a pass in respect thereof under Rule 3 or under Rule 13, or

for determining the amount of money, if any, payable on account thereof to Government, and for the payment of such money, or

in order that any mark required by law or by these rules to be affixed thereto, may be so affixed.

16. A forest officer appointed by or under the orders of the Conservator shall have charge of each such depôt, and no timber or other forest produce shall be brought into, stored at, or removed from a depôt without the permission of such officer, and for storing timber or other forest produce in such depôt, and allowing laden carts, or loads or cattle to stand or be deposited therein, such fees shall be payable as the Conservator of Forests, with the previous sanction of Government, shall from time to time notify.

17. The Conservator of Forests shall from time to time make known by notification published in the *Bombay Government Gazette*, and locally in such manner as he deems fit, the name and situation of every depôt in his division.

18. The person in charge of any vessel which carries timber or other forest produce on a river on the banks of which one or more of such depôts are situated, shall call and stop his vessel at each such depôt which he has to pass, in order that the timber or other forest produce may be examined, if necessary, under the provisions of Rule 14, and the person in charge of such vessel shall not proceed with such vessel past any such depôt without the permission of the forest officer in charge of such depôt.

19. No person shall close up or obstruct the channel or any portion of the bank of any river lawfully used for the transit of timber or other forest produce, or throw grass, brushwood, branches, or leaves into any such river, or do any other act which may cause such river to be closed or obstructed.

20. Any forest officer not lower in rank than a Sub-Assistant Conservator of Forests may take such measures as he shall at any time deem to be emergently necessary for the prevention or removal of any obstruction of the channel, or of any part of a bank of a river lawfully used for the transit of timber or other forest produce, but any such case which is not emergent shall be reported to the Collector, who may by written notice require the person whose act or negligence has caused or is likely to cause the obstruction, to remove or take steps for preventing the same within a period to be named in such notice, and if such person fails to comply with such notice may himself cause such measures to be taken as he shall deem necessary.

The reasonable costs incurred by a forest officer or by the Collector under this rule shall be payable to Government by the person whose act or negligence necessitated the same.

21. No person shall establish a saw-pit or convert, cut, burn, conceal or mark timber within one mile of the limits of any reserved forest (whether a village forest or not) or of any protected forest, without the previous written permission of a forest officer not lower in rank than a Sub-Assistant Conservator.

22. No timber of large scantling which does not belong to Government shall be moved from any district of the Presidency of Bombay, unless there is affixed thereto a distinguishable Private-Property-mark of the owner of such timber of a description which has been registered in the office of the Conservator of the Division, nor (if the said Conservator shall so direct) unless there has been made thereupon a Government transit mark of such description as shall from time to time be prescribed in this behalf by the said Conservator.

23. The Conservator of Forests shall upon receipt of an application for registration of any form, mark, or name for the purposes of Rule 6 or Rule 22, inquire into the authenticity of the same, and if he sees no objection shall, on payment by the applicant of such fee as shall from time to time be prescribed by Government, register such form, mark, or name in his office.

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Every such registration shall be held good for a period of one year only.

24. No person other than a forest officer whose duty it is to use such mark, shall use any property mark for timber which is identical with or nearly resembles any Government transit mark or any mark with which timber belonging to Government is marked;

and no person shall, while any timber is in transit under a pass issued under Rule 13, alter or efface any mark on the same.

25. Any person who breaks any of the foregoing Rules 2 to 24, both inclusive, shall be punished with imprisonment for a term which may extend to six months, or fine which may extend to five hundred rupees, or both.

APPENDIX A. (*see* RULE 2).

Routes by which alone timber and other forest produce may be moved into or from the Kánara district:

1. Tinái Ghát Road.
2. Májáli Road.
3. Mouth of the Kálinadi river, Sadáshivgad, Kodibág, and Kadra Bandars.
4. Kárwár Bandar.
5. Belikeri Bandar.
6. Ankola Bandar.
7. Mouth of the Gangávali river, Manjguni, Gangávali, and Gundbala.
8. Mouth of the Tadri river, Tadri, Aghnáshini, Mirján, Hegde, Devgi, Manki, and Upinpattan Bandars.
9. Murdeshvar Bandar.
10. Mouth of the Venktápur river (Shiráli and Venktápur Bandars).
11. Bhatkal river (Bhatkal Bandar.)
12. Gersappa Ghát Road to Tálguppa (Gersappa and Honávar Bandars).
13. Siddápur Road to Sorab *viâ* Vardha.
14. Sirsi to Sorab *viâ* Banavási.
15. Sirsi to Sammasgi *viâ* Dasankop.
16. Sirsi to Hángal and Bankápur *viâ* Pála.
17. Katur to Murguddi.
18. Mundgod to Bankápur *viâ* Sauvalli.
19. Mundgod to Taras *viâ* Yargatti.
20. Yellápur to Hubli *viâ* Kirvatti.
21. Haliyál to Dhárwár *viâ* Mávinkop.
22. Haliyál to Belgaum-Madanhalli.
23. Anshi Ghát Road *viâ* Supa and Shitovde to Belgaum.
24. Supa *viâ* Jagalpet, Ámod, and Hemarge to Khánápur.

By order of His Excellency the Right Honourable the Governor in Council,

J. NUGENT,
Acting Secretary to Government.

TREES AND SHRUBS.[1]

TREES AND SHRUBS.

The following list contains most of the trees and shrubs not mentioned above at pp. 60-79; also many of the more common herbs found on the Sahyádris of North Kánara:

Ranunculaceæ.—Naravelia zeylanica, D.C. A climbing shrub common above the Sahyádris. Flowers in October.

Anonaceæ.—Uvaria narum, Wall. A woody climber found below the Sahyádris at Katgal. Flowers in November.

[1] Contributed by Mr. W. A. Talbot, Assistant Conservator of Forests.

Goniothalamus cardiopetalus, Hf. & T.—A small tree, common in some of the evergreen forests of the Kumta sub-division. Flowers in February.

Anona squamosa, L.—The Custard-apple. A small tree naturalised in parts of the Yellápur forests.

Anona reticulata, L.—Bullock's-heart. Cultivated in Dhárwár and probably in North Kánara.

Unona discolor, Vahl.—A climbing shrub with sweet smelling flowers. Found in Kárwár. Flowers in August.

Sacco petalum tomentosum, Hf. Hoom.—A large tree with valuable wood. Flowers in March and April.

Capparideæ.—Capparis zeylanica, L.; C. Heyneana, Wall; C. Moonii, Wgt.; C. sepiaria, L.; C. Horrida, L.; C. tenera, Dalz.—Shrubs and climbers found in North Kánara and flowering in the cold and hot seasons.

Violaceæ.—Ionidium suffruticosum, Ging. A variable perennial found near Kumta. Flowers at different times.

Menispermaceæ.—Cocculus macrocarpus, W. & A.—A large climber, common in the Supa forests. Flowers in the cold season.

C. villosus, D.C.—A species common about Kárwár. Flowers in the hot season.

Cyclea peltata, Hf.—A very common species near Yellápur.

Stephania hernandifolia, Walp.—Common about Yellápur. Flowers in the cold season.

Bixineæ.—Flacourtia Ramontchi, L. Hèrit. A small armed tree common near Yellápur. Flowers in the hot season.

Scolopia crenata, Clos.—A small armed tree found near Kárwár. Flowers in the hot season.

Pittosporeæ.—Pittosporum dasycaulon, Miquel. A small tree common along the Sahyádris. Flowers in the cold season.

Polygaleæ.—Poligala chinenses, L., and Polygala elongata, Klein, are both found in North Kánara, and flower during the rains.

Caryophylleæ.—Stellaria media, L. A common weed. Flowers throughout the year.

Hypericineæ.—Hypericum japonicum, Thumb. A common herb in rice fields near Yellápur. Flowers in March.

Guttiferæ.—Garcinia Cambogia, Desr. An evergreen tree yielding an insoluble gamboge. The grooved fruit of this species is characteristic. This tree flowers in the cold season.

Garcinia ovalifolius, Hf.—A large tree common in parts of the Ankola sub-division. Flowers in the cold season.

Dipterocarpeæ.—Ancistrocladus Heyneanus Wall. A climbing shrub, with woody tendrils, found in the Ankola subdivision. Flowers in the cold season.

Shorea Talura, Roxb.—A large tree said to yield a kind of lac, found in the Sirsi sub-division. Flowers in the cold season.

Malvaceæ.—Sida humilis, Willd. A trailing herb; common above the Sahyádris. Flowers during the rainy season.

Sida mysorensis, W. & A.—An under-shrub. Flowers at the end of the rainy season. Common about Yellápur.

Sida carpinifolia, L.—A shrub. Flowers at various times. Common about Yellápur.

Sida rhoimbifolia, Linn.—A wiry shrub, common about Yellápur. Flowers in August.

Abutilon polyandrum, Schlect.—A large herb, found on the Árbail Ghát. Flowers in the cold season.

Abutilon indicum, G. Don.—Herb. Flowers in November. Pála.

Urena lobata, Linn.—An under-shrub. Common in most open places of North Kánara. Flowers in the cold season.

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Urena sinuata, Linn. — Under-shrub, common throughout Kánara. Flowers in the cold season.

Decaschistia trilobata, Wgt.—A shrub common in parts of the Siddápur sub-division of North Kánara. Flowers during the rains. Closely allied to the genus Hibiscus.

Hibiscus Trionum, L.; H. hirtus, L.; H. Solandra, L'Her.; H. vitifolius, L.; H. cannabinus, L.; H. Sabdarippa, L.; and H. tetrapyllus, Roxb.—All these species are to be found in different localities throughout North Kánara. H. cannabinus and H. Sabdarippa are introduced cultivated species.

Thespesia lampas, Dalz.—A common shrub found throughout North Kánara. Does not become arborescent. Flowers in the cold season.

Sterculiaceæ.—Pterospermum acerifolium. A large tree with very large beautiful flowers found on the Devimani Ghát and in parts of the Ankola sub-division. Flowers in November and December.

Pterospermum Heyneanum, Wall.—A large tree found near the falls of Gersappa. Flowers in the hot season.

Melochia corchorifolia, Linn.—An erect shrub common about Yellápur. Flowers in September.

Waltheria indica, L. — A perennial shrub, common along the coast. Flowers throughout the year.

Tiliaceæ.—Grewia microcos, L. A common shrub. Flowers during the rainy season.

G. pilosa, Lam.—A small tree common in most parts of North Kánara. Flowers in the hot weather.

G. lævigata, Vahl.—Arborescent, often shrubby. Flowers in October.

Grewia columnaris, Sm.—A shrub found in North Kánara near the falls of Gersappa. Flowers in the rainy season.

G. umbellifera, Bedd.—A scandent shrub found on the Árbail Ghát at the falls of Jog and elsewhere. This is one of the doubtful species of the Flora of British India of Hooker. Flowers in the cold and hot season.

Triumfetta pilosa, Roth., flowers in September; T. rhomboidea, Jacq., flowers in October; and T. Annua, L., flowers in the hot season.

Corchorus capsularis, L.—Found on road-sides sparingly throughout North Kánara. Flowers in the rainy season, and yields the jute of commerce.

Corchorus olitorius, L. — A small herb which yields a kind of jute. Abundantly wild about Yellápur. Flowers at the end of the rainy season.

C. urticifolius, W. and A. — Either this or a closely allied species is common near Belikeri in North Kánara and flowers in August.

Corchorus fascicularis, Lam. — An annual common in fields near Pála, North Kánara. Flowers during the rains.

Elæocarpus, Sp.—A tree found near the falls of Gersappa, and buds in December.

Lineæ.—Linum mysorense, Heyne. A small slender herb common near Yellápur and elsewhere. Flowers in September.

Malpighiaceæ.—Hiptage Madaclota, Gaert. — A tall climber; common below the Sahyádris in North Kánara, and flowers in the cold season.

Aspidopterys cordata, A. Juss.—A climbing shrub, very common about Yellápur, and flowers in October.

Zygophylleæ.—Tribulus terrestris, Linn. This remarkable herb is common about Dhárwár and may occur in parts of Kánara. Flowers in the rainy season.

Geraniaceæ.— Oxalis corniculata. A common weed, found everywhere.

Biophytum, Reinwardtii, Walp, and B. sensitivum. — Both species found in North Kánara and flowering during the rainy season.

Averrhoa carambola, L., and A. Bilimbi, L.—Both species are cultivated by the Havig Bráhmans for the fruit.

Impatiens rivalis, Wgt.; I. diversifolia, Wall; I. tenella, Heyne; I. tomentosa, Heyne; I. Balsammia, L.; and I. pulcherrima, Dalz., I. Kleinii, W. and A., I. Lawii, Hf. and T.—All herbs with succulent stems, appearing during the rainy season.

Rutaceæ. — Evodia, Roxburghiana, Benth. A moderate-sized tree, common in parts of Kánara. Flowers in August.

Zanthoxylum ovalifolium, Wgt.—A prickly shrub with a scandent habit, common in the Siddápur sub-division of North Kánara. In flower and fruit during the hot season.

Z. Rhetsa, D. C.—A middle-sized tree, armed with sharp prickles and very common throughout North Kánara. Flowers in August and September.

Toddalia aculeata, Pers. — A rambling prickly shrub found in some of the Siddápur forests.

Acronychia laurifolia, Blume.—A small tree found near Kárwár and flowers in July.

Glycosmis pentaphylla, Correa.—A common shrub abundant in most of the evergreen forests throughout Kánara. Flowers at various times.

Murraya kœnigii, Spreng.—A small tree with odorous flowers, common near Yellápur, and flowering in the hot season.

Clausena indica, Oliv.—A small tree found near the Nilkund Ghát in North Kánara. Flowers in the cold season.

Luvunga eleutherandra, Dalz.—A scandent shrub with recurved spines; common on the Sahyádris near Supa.

Ochnaceæ.—Ochna squarrosa, Linn. A shrub common near Kárwár, not O. pumila, mentioned by Dalzell in the Bombay Flora, page 46. Flowers in the cold season.

Burseraceæ.—Garuga pinnata, Roxb. A large tree much resembling Odina Wodier in habit. Common in the Mundgod petty division and elsewhere in North Kánara. Flowers in the hot season.

Meliaceæ. — Turræa villosa, Benn. A small weak shrub, flowering during May on the Sayhádris.

Nageramia alata, W. and A.—A small shrub with long white flowers. Appears during June and July below the Sahyádris in flower.

Dysoxylum, Sp.—A large tree differing from all the known species. Found in the Kumta sub-division in flower in December. Fruit unknown.

Aglaia, Roxburghiana, Mig.—A tree or shrub common near Kárwár and elsewhere in North Kánara. Flowers in October and November.

Lansium anamalyanum, Bedd.—A tree common about the falls of Gersappa. Flowers in April.

Walsura piscidia, Roxb.—A large tree found in the evergreen forests on the Devimani Ghát. Flowers in the cold season.

Chailletiaceæ—Chailletia gelenoides, Hook, f.—A shrub common near Kárwár. Fruit with a red mesocarp. Flowers in the hot season.

Olacineæ.—Cansjera Rheedii, Gmel. A climbing evergreen shrub with doubtful affinities. Common below the Sayhádris and flowers in the cold season.

Olax scandens, Roxb.—A scandent shrub found on the forests of the Siddápur sub-division. Flowers in the cold season.

Mappia fœtida, Miers.—A tree with fœtid flowers. Common on the Vaddi Ghát. Flowers in the rainy season.

Mappia ovata, Miers, and M. oblonga, Miers.—These are both small trees and were determined as above from specimens sent to Calcutta and Kew. There is a doubt, however, as to how far they differ from

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M. fœtida, Miers, all of the three species being probably identical. M. fœtida flowers at the end of the rainy season and the other two species in October and November.

Celastrineæ.—Euonymus indicus, Heyne. A shrub or small tree found on the Árbail Ghát, also in the Sirsi sub-division and probably elsewhere in Kánara. Flowers in the cold and fruits in the hot season.

Lophopetalum Wightianum, Arn.—A large tree with useful wood. Common in many of the evergreen forests of North Kánara, and flowers in the hot season.

Celastrus paniculata, Willd.—One of the most common scandent shrubs in Kánara. Flowers in the hot season.

Gymnosporia.—Gymnosporia puberula, Laws (?). This is a shrub found at Siddápur and near the falls of Gersappa. Flowers in April.

G. Rothiana, W. and A.—A common shrub below the Sahyádris in the Kumta sub-division. Flowers and fruits during the cold season.

Gymnosporia montana, Roxb.—This is No. 65 of the foregoing list, entered as a Celastrus. It is now entered as Gymnosporia in the Flora of British India of Hooker.

Elœodendron glaucum, Pers.—A middle-sized tree found sparingly in parts of Kánara, and flowers in August.

Hippocratea indica, Willd. and H. Grahamii, Wight.—These two climbing shrubs are found on the Sahyádris in the Kumta sub-division. The former flowers throughout the cold season and the latter during the rainy season.

Salacia priniodes, D.C.—A climbing shrub not observed as a tree in North Kánara. Flowers in the cold season.

Rhamneæ.—Ventilago calyculata, Tulasne. A climbing and scandent shrub, very common above the Sahyádris. Flowers in October.

Zizyphus nummularia, W. and A.—A very common armed shrub found in the inland parts of North Kánara. Flowers in the hot season.

Z. Œnoplia, Mill.—A very common scandent shrub found throughout North Kánara and flowers in the hot weather.

Z. rugosa, Lamk.—A straggling climbing shrub with white edible fruit. Flowers in one cold season.

Gouania microcarpa, D. C.—An unarmed climber, common near Yellápur and elsewhere in North Kánara. Flowers in the cold season, and fruits in January.

Ampelideæ.—Vitis repens, W. and A., flowers in the hot season. V. discolor, Dalz., No. 76 of other list, flowers in the rainy season. V. glauca, W. and A., flowers in the hot season. V. repanda, W. and A., flowers in April. V. adnata, Wall., flowers in April-May. V. tomentosa, Heyne, flowers in the cold season. V. latifolia, Roxb., flowers in the rainy season. V. indica, Linn., flowers in the hot season. V. carnosa, Wall., flowers before the rains. V. Canarensis, Dalz., flowers in the cold season. V. auriculata, Roxb., flowers in the hot season, and V. lanceolaria, Roxb., flowers in November. V. lenuifolia, W. and A., flowers in the rainy season. V. gigantea, Bedd., flowers in the rainy season. V. elongata, Wall., common about Kárwár, flowers in July. All these species and several others are to be met with throughout the forests of North Kánara.

Leea macrophylla, Roxb.—A shrub with simple leaves of great size, probably larger than the leaves of any other tree or shrub growing in North Kánara. Flowers in October.

Leea crispa, Willd. and L. Sambucina, Willd.—Both these species are most common throughout North Kánara; the former below the Sahyádris and the latter above. Both species flower in the cold and rainy seasons.

L. aspera, Wall. — This species is common on the Guddehalli hill near Kárwár. Flowers in the rainy season.

Sapindaceæ.—Cardiospermum halicacabum, L. An annual common near Kárwár and elsewhere. Flowers in the rainy season.

Nephelium Longana, Camb. — A middle sized tree common in many of the evergreen forests of North Kánara. Flowers during the hot season.

Allophyllus Cobbe, Blume.—One of the most common climbing shrubs found in North Kánara, where it is not at all variable. Stated to be a most variable species in the Flora of British India of Hooker.

Harpullia cupanoides, Roxb.—A large tree with remarkable inflated fruit of a bright yellow or orange colour. Common in many of the evergreen forests. Flowers in the cold season ; fruit ripens in the hot season.

Turpinia pomifera, D.C.—A large tree found in the Siddápur subdivision and flowers in the cold season.

Anacardiaceæ.—Solenocarpus indica, Wgt. and Arn. A large tree very rare on the Sahyádris of North Kánara. Flowers in the rainy reason and found near Bara in ripe fruit in December.

Holigarna Grahamii, Hook.—A large tree 80 to 100 feet high. Not a small tree in North Kánara. Flowers during the cold season and common on the Sayhádris near Bara.

Connaraceæ.—Rourea santaloide, W. and A.—A shrub common about Kárwár and near Yellápur. Flowers in the hot season.

Connarus Wightii, Hook.—A shrub common below the Sayhádris near Kárwár. Flowers in the cold and hot seasons. The capsular fruit of this species is characteristic. The base of the seed is surrounded by a coloured aril.

Leguminosæ.—Crotalaria filipes, Benth., flowers appear in the cold and rainy seasons. C. albida, Heyne variety, epunctata, Dalz., flowers appear in the cold season. C. thana, Burm, flowers appear in the rainy season. C. linifolia, L., herb two feet high, flowers in September. C. Calycina, Schrank, flowers appear in the rainy season. C. dubia, Grah., flowers appear in the cold season. C. lutescens, Dalz., flowers appear in the cold season. C. retusa, Linn., flowers appear in the cold season. C. sericea, Retz., flowers appear in the rainy season. C. Leschenaultii, D. C., flowers appear in the cold season. C. verrucosa, Linn., flowers appear in the cold season. C. Heyneana, Grah., flowers appear in the cold and hot seasons. C. leptostachya, Benth., flowers appear in the cold season. C. juncea, Linn., flowers appear in the cold season. C. fulva, Roxb., flowers appear in the cold season. C. striata, D. C., flowers appear in the cold season. C. orixensis, Roxb., flowers appear in the hot season. All these species are found in North Kánara. The list is not yet complete.

Indigofera endecaphylla, Jacq.—Flowers in the rainy season. I. hirsuta, Linn., flowers in the rainy season. I. tinctoria, Linn., flowers in the rainy season. I. pulchella, Roxb., flowers in the cold season. I. glandulosa, Willd., flowers in the cold season. I. trifoliata, L., flowers in the cold season.

I. triquetra, Dalz. — A prostrate herb growing on the laterite near the coast at Kumta. Flowers in September.

Kánara species of Indigoferæ.—I. tinctoria appears to be indigenous in the Kumta sub-division but is nowhere plentiful.

Psoralea corylifolia, Linn.—A common erect annual, found on the borders of the Kánara district near Pálá. Flowers in the rainy season.

Millettia racemosa, Benth.—A woody climber with silky leaves, found at Yellápur. Flowers in the hot season.

Tephrosia tinctoria, Pers.—An under-shrub common about Yellápur and elsewhere. Flowers in the rainy season.

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Sesbania aculeata, Pers.—A robust herb, common near Yellápur, flowering in the cold season.

Sesbania grandiflora, Pers.—A soft-wooded tree with large flowers planted commonly about Kárwár and elsewhere. Flowers at different times during the year.

Geissapsis cristata, W. and A.—A very common trailing annual growing in damp localities. Flowers in September.

G. tenella, Benth.—Has the habit of G. cristata, but is a more slender species; common near Kumta and elsewhere. Flowers in September and October.

Zornia diphylla, Pers.—A common herb. Flowers in October.

Smithia sensitiva, Art., flowers in the cold season; S. bigemina, Dalz., flowers in the rainy season; and S. dichotoma, Dalz., flowers in September.

S. capitata, Dalz.—Common in forests near Siddalgundi. Flowers in August and September.

S. pycnantha, Benth. Common near Sirsi. Flowers July to September.

Æschynomene indica, L.—An annual. Flowers in October and November.

Æ. aspera, Linn.—A swamp species. Common in North Kánara. Yields the pith of which sun-hats are made. Flowers in the cold season.

Pseudarthria viscida, W. and A.—A scandent shrub common about Yellápur. Flowers at the end of the rainy season.

Uraria hamosa, Wall.—Shrub common near Yellápur. Flowers in October.

Alysicarpus hamosus, Edgew.; A. vaginalis, D. C.; A. buplerifolius, D.C.; A. rugosus, D. C., and A. tetragonolobus, Edga.—All these species are found in North Kánara. A. vaginalis is very common and flowers in the rainy season as do the others also.

Desmodium cephalotes, Wall.; D. pulchellum, Benth.; D. laxiflorum, D.C.; and D. gangeticum, D.C.—All these species flower during the rainy season, found as forest undergrowth.

D. diffusum, D. C., flowers during November and found near Pála in the rice-fields. D. polycarpum, D. C.; D. heterophyllum, D. C.; D. triflorum, D.C.; and D. gyrans., D.C., flower during the rainy season. D. polycarpum and D. gyrans are common in the forests of North Kánara. D. heterophyllum is an herb found in the rice-fields and along road-sides.

Abrus precatorious, L.—A common climber. Flowers at the end of the rainy season.

A. pulchellus, Wall.—A species found at Kárwár. Flowers in September and October.

Glycine pentaphylla, Dalz.—A slender twining plant. Common near Yellápur and flowers in the rainy season.

Teramnus labialis, Spreng.—A climbing slender plant, flowering in the cold season.

Mucuna monosperma, D.C.—A woody climber, common in parts of North Kánara. Flowers during the rainy season.

M. pruriens, D.C.—A common climber with S-shaped pods, flowering in the cold season.

Erythrina stricta, Roxb.—A large tree common near villages. Flowers in the rainy season.

Canavalia ensiformis, D. C.—A glabrous climber common on the coast, flowering during the rainy season; pods remain long on this shrub.

Phaseolus trilobus, Ait.; P. Mungo, L.; and P. trinervius, Heyne. Common in North Kánara during the rainy season.

Clitoria Ternalea, L.—A common climber of North Kánara. Flowers during the rains.

Dolichos Lablab, Linn.—Wild wide-twining plant, flowering in the cold season.

Atylosia lineata, W. and A.—Erect shrub, common about Yellápur and elsewhere. Flowers in November and December.

A. kulnensis, Dalz.—A very rare climbing shrub found on the Vaddi Ghát, flowering in December.

Cylista scariosa, Ait.—A woody twining shrub, very common, flowering in the cold season.

Flemingia strobilifera, R. Br.—An erect shrub; flowers in the cold season. Common in the forests near Yellápur.

Dalbergia sympathetica, Nimmo; D. tamarindifolia, Roxb.; D. volubilis, Roxb.; and D. rubiginosa, Roxb.—Four climbing species, found in the North Kánara forests.

D. lanceolaria, Linn. — A large whitish barked tree, flowering in March and common about Mundgod and Pála.

Derris thrysiflora, Benth.; D. canarensis, Baker, and D. ulignosa, Benth. Climbing shrubs flowering during the cold and hot seasons.

D. scandens, Benth.—Climbing over very high trees. Comes into flower at the beginning of the rainy season, when it is a beautiful object in the forest.

Cæsalpinia sepiaria, Roxb.—This thorny climber is only found on the borders of Kánara and is very common in Dhárwár. Flowers in the cold season.

C. Bonducella, Fleming.—A prickly shrub found above and below the Ghâts. Flowers in the rainy season.

C. mimosoides, Lam.—This species with handsome yellow flowers is most common about Yellápur and elsewhere forming impenetrable thickets. It flowers in the cold season.

Cassia sophera, Linn.; C. auriculata, Linn.; C. timoriensis, D.C.; C. glauca, Lam.; C. Absus, Linn.; C. pumila, Lam.; C. Tora, L.; C. mimosoides, Linn.; and C. nigricans, Vahl.—All these species of Cassia are found in North Kánara and flower during the rainy season. C. auriculata, glauca, and Absus also flower during the cold season.

Bauhinia Lawii, Benth.—This is described in the Flora of British India as scandent. It is however, as described at page 63, a very large tree. Specimens were referred to Kew and it was named as above. It differs from B. Lawii in several respects and may eventually be separated from that species.

Neptunia triquetra, Benth.—A shrub with sensitive leaves found near Dhárwár; not yet observed in Kánara. Flowers in the cold season.

Entada scandens, Benth.—An immense climber with long sword-like pods found in the Kumta sub-division. Flowers during the hot season.

Mimosa pudica, Linn.—The sensitive plant, spread throughout Kánara. Flowers during the cold season.

Acacia Intsia, Willd. and A. pennata, Willd., are prickly climbers, flowering in the hot and rainy seasons.

Albizzia odoratissima, Benth.—A large tree common in parts of Kánara, and flowers in the hot season.

Pithecolobium bigeminum, Benth.—A large tree growing in the evergreen forests on the Árbail and Vaddi Ghâts. Flowers during the hot season. The twisted fruit of this species is remarkable.

Crassulaceæ.—Bryophyllum calycinum, Salisb. Common in damp localities.

Droseraceæ.—Drosera indica, L. and D. Burmanri, Vahl. Both common in rice-fields, the former during the rainy and the latter during the cold season.

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Rhizophoreæ.—Rhizophora mucronata, Lam. A tree common along tidal creeks in North Kánara. Flowers in the cold season.

Combretaceæ.—Calycopteris floribunda, Lam. Probably the commonest shrub (very diffuse) throughout Kánara. Flowers in the hot season.

Combretum ovalifolium, Roxb., and C. extensum, Roxb. — Both these scandent species are found common throughout North Kánara, flowering in the cold season. The winged fruits appear to ripen shortly after the flowers disappear.

Quisqualis indica, Linn.—Has run wild around Dhárwár and not found as yet in Kánara in a similar manner.

Myrtaceæ.—Eugenia malaccensis, L. Cultivated for its flowers by the Havig Bráhmans. Flowers in the hot season.

E. Jambos, Linn.—A large tree with white flowers, found in the Sirsi sub-division. Flowers in the rainy and cold seasons.

E. Wightiana, Wgt., and E. zeylanica, Wgt.—Two Ghát species which flower in March are found in moist situations.

E. macrosepala, Duthie.—A shrub common below the Sahyádris in the Ankola sub-division and flowers in the cold season.

E. laeta, Ham.—A small tree found near the falls of Gersappa and flowers in the cold season.

E. caryophýlleæ, Wight.—A small tree very common in North Kánara. Flowers in the hot season. Fruit black edible.

E. Heyneana, Wall.—A small tree found on the Ankola sub-division Ghâts. Flowers in the cold season.

E. Mooniana, Wight. —A wiry shrub found at Guddehalli. Flowers during the rainy season.

Barringtonia acutangula, Gaert.—A small tree with pendant spikes of flowers which blossom in the cold and hot seasons.

Melastomaceæ. — Osbeckia cupularis, Don. Common about Yellápur during the rains.

O. truncata, Don. A nearly allied species to O. cupularis. Flowers in the rainy season.

Sonerila Rheedii, W. and A.—A species quite distinct from S. Wallachii (of the Fl. Br. India, p. 538, vol. ii.) in having a distinct stem. Flowers in the rainy season below the Sahyádris near the coast.

Memecylon edule, Roxb.—A common shrub in North Kánara. Flowers during the cold season.

M. terminale, Dalz.—A species with terminal flowers and sessile leaves. Flowers in the hot season near Supa.

Lythraceæ. — Ammania pentandra, Roxb. An herb common in damp places. Flowers in the cold season.

A. rotundifolia Ham. and A. baccifera, L., are herbs common in damp places. Flower during the rainy reason.

Woodfordia floribunda, Salis.—A shrub with long slender branches, most common in rocky situations. Flowers principally in the cold and hot seasons.

Sonneratia acida, L.—A small tree found along the banks of the Kálinadi, flowering during the rainy season.

Onagraceæ.—Jussiæa repens, L., and J. suffurticosa, L. Both species are common in moist situations throughout North Kánara. The former species flowers in the cold season (November), the latter during the rains (September and October).

Ludwirgia parviflora, Roxb.—A common herb found near Yellápur during September.

Trapa bispinosa, Roxb.—A common pond herb; flowers in the hot season.

Samydaceæ.—Casearia tomentosa, Roxb. A very common tree in parts of North Kánara, particularly in the Sirsi sub-division. Flowers in the hot season.

C. graveolens, Dalz.—A small tree found along river-banks and flowers during the hot season.

Passifloræ.—Modecca palmata, Lam. A glabrous plant with scandent habit. Flowers and fruits during the hot season. Seeds large pitted. Very common at Guddehalli near Kárwár.

Cucurbitaceæ-Trichosanthes cucumerina.—A twining plant common near Kárwár. Flowers in August.

Momordica dioica, Roxb. — Found above and below the Sahyádris. Flowers in September.

M. Charantia, Linn.—A climber with simple tendrils, found in hedges near Yellápur, running wild. Flowers in October.

Cucumis trigonus, Roxb.—Common throughout North Kánara.

Cephalandra indica, Nand.—A climber with scarlet fruit, common near Yellápur. Flowers during the rains.

L. zehneria umbellata.—A very common climbing plant in North Kánara. Flowers during the rains.

Bryonia laciniosa, Linn.—A climbing scabrid herb with befid tendrils and rough seeds. Flowers in October.

Mukia scabrella, Arn.—A climbing angular stemmed herb, with bright red fruit the size of a small cherry. Flowers in October.

Begoniaceæ.—Begonia concanensis, D.C. Found on the Nilkund Ghát. Flowers during the rainy season.

Begonia Sp.—A small-leafed species growing on stones in the beds of rivers and flowers in August.

B. integrifolia, Dalz.—An ornamental species common in the Anshi Ghát. Flowers during August and September.

B. crenata, Dryand.—A small species found near Kumta. Flowers in September.

Umbelliferæ.—Hydrocotyle asiatica, L. and H., javanica, Thumb. Both common herbs in moist situations near ponds and streams in North Kánara. Flower in the hot season.

Pimpinella, Sp. (tomentosa, Dalz).—An herb growing near Yellápur and flowering during the rainy season.

Araliaceæ.—Heptapleurum venulosum, Scem. A small tree very common in the Siddápur sub-division. Flowers in the hot season. There is also a climbing variety of this species which is common about Yellápur and flowers in the hot season.

Rubiaceæ.—Anthocephalus cadamba, Miq. A large tree with fruit the size of a small orange. Grows wild in the forests of North Kánara, but rarely met with. Flowers at the beginning of the rainy season.

Wendlandia Notoniana, Wall. — A small tree or shrub with terminal panicles of fragrant flowers, and very common throughout North Kánara. Flowers in the cold season.

Dentella repens, Forst.—An herb very common in moist places, and flowers in May.

Hedyotis coerulea, W. and A.; H. hispida, Retz; H. nitida, W. & A.; and H. Auricularia, L.—These species are common throughout the district of North Kánara and blossom at various seasons of the year.

Oldenlandia corymbosa, L., and O. diffusa, Roxb., are common weeds found in moist places throughout the district of North Kánara.

Oldenlandia Heynii, Br.—A common herb appearing during the rainy season.

Anotis fœtida, Dalz.; A. carnosa, Dalz.; and A. Rheedii, W. & A.—Common herbs appearing during the rainy season.

Appendix.

TREES AND SHRUBS.

Ophiorrhiza Harrisiana, Heyne.—A common herb on the Árbail Ghát and elsewhere in North Kánara. Flowers in the rainy season.

Gardenia lucida, Roxb.—A small tree with resinous buds common in the Siddápur táluka. Yields the *dikemáli* resin used in cutaneous diseases. Flowers in the hot season.

G. gummifera, L.—A bush with resinous buds. This species also yields a resin much used in skin-diseases.

Knoxia corymbosa, Willd.—An annual, common about Yellápur at the end of the rainy season.

Canthium Rheedii, D.C.—An armed shrub, common about Yellápur, erect, not scandent. Flowers in the hot season.

C. parviflorum, Lamk.—A rigid shrub armed with straight spines and found near Pála. Flowers in the hot season.

Vangueria spinosa, Roxb.—A small tree with large green globose fruit. Pyrenes four to five black. Flowers in the cold and hot seasons.

Ixora lanceolaria, Colebr.—Shrub found in the evergreen forests of the Kumta sub-division. Flowers in the cold season.

I. brachiata, Roxb.—A small tree found in the evergreen forests throughout the district. Flowers in January.

I. nigricans, Br.—A very common shrub with handsome flowers, growing in the evergreen forests of North Kánara. Flowers in April and May.

Pavetta indica, Linn.—There are two distinct varieties of this shrub in North Kánara, one with glabrous and the other with tomentose leaves. Both are common throughout the district and flower in the hot season.

Morinda citrifolia, L.—A small tree with yellow wood common near Devikop.

Psychotria truncata, Wall., and P. Dalzellii, Hook. F.—Both these shrubs are very common throughout North Kánara. P. truncata flowers in the hot season and P. Dalzelii during the rainy season.

Chasalia curviflora, Thw.—A common shrub in parts of Kánara, mostly found in evergreen forests. Flowers during the hot season.

Rubia cordifolia, Linn.—A climbing plant with scabrid leaves, very common in parts of the Yellápur sub-division. Flowers during the rainy season.

Compositæ.—Veronia divergens, Benth., and V. indica, Clarke. These two species are found throughout Kánara, flowering in the cold season.

Adenostemma viscosum, Forst.—A common erect herb of North Kánara.

Elephantopus scaber, Linn.—Common everywhere, flowering in the rainy season.

Grangea madraspatana, Poir.—A common rice-field species, flowering throughout the year.

Epaltes divaricata, Cass.—A rice-field species flowering during December and January.

Sphaeranthus indicus, L.—Common in rice-fields during the cold and hot seasons.

Eclipta alba, Hassk.—Common during the rainy season at Kárwár.

Blainvillea latifolia, D.C.—A common herb, appearing during the rainy season.

Wedelia urticæfolia, D.C.—Common at Kárwár during August.

Glossocardia linearifolia, Cass.—A very small plant appearing during the rainy season.

Launea pinnatifida, Cass.—A species growing on the sand along the coast. Flowers during the rains.

Campanulaceæ.—Lobelia trigona, Roxb. A common herb appearing during the rainy season.

L. nicotianæfolia, Heyne.—A tall hollow-stemmed plant with minute poisonous seeds found along the Sahyádris, flowering during the cold season.

Plumbagineæ.—Plumbago zeylanica, Linn. A common shrub found in parts of North Kánara, flowering in the cold season.

P. rosea, L.—Shrub cultivated for its handsome flowers by the Havigs in their betelnut gardens, and has escaped cultivation in many places, being found on the pathways near their houses.

Myrsineæ. — Maesa indica, Wall. A small tree very common on the Devimani Ghát, flowering in the cold season.

Maesa dubia, Wall.—A hairy shrub found near the falls of Gersappa and elsewhere, flowering during the cold season.

Myrsine capitellata, Wall. — A small tree common near the falls of Gersappa. Flowers in the cold season.

Embelia robusta, Roxb. — A rambling scandent shrub, very common above and below the Sahyádris. Flowers during the rainy season.

E. Ribes, Burm.—A scandent shrub found near the falls of Gersappa. Flowers during the cold season.

Ardisia humilis, Vahl. — An erect shrub very common in the evergreen forests of North Kánara. Flowers in the hot season.

Ægiceras majus, Gaertn. — A small tree growing near the coast. Flowers in the cold season.

Sapotaceæ. — Bassia malabarica, Bedd. A small or middle-sized tree found along river-banks in the Kumta sub-division. There are two varieties of this tree, one with large and the other with small leaves.

Sideroxylon tomentosum, Roxb.—A very common small tree found in many of the evergreen forests above the Sahyádris. Flowers in the cold season.

Ebenaceæ.—Maba nigrescens, Dalz.—A small tree found near the falls of Gersappa and elsewhere in North Kánara. Flowers in the cold and hot season.

Diospyros pruriens, Dalz.—A medium-sized tree, found on the Nilkund Ghát. Flowers in the cold season.

D. Embryopteris, Pers.—A small tree flowering in the cold season and found near Yellápur.

Diospyras microphylla, Bedd.—An immense evergreen tree very common in North Kánara. The foliage much resembles that of the boxwood tree in Europe. Flowers in the cold season.

D. Tupru, Buch-Ham. — A small tree found near Yellápur in North Kánara. Flowers in the cold and hot seasons.

D. Candolleana, Wgt.—A large tree with coriaceous leaves, flowering in the hot season and found near Siddápur and elsewhere in North Kánara.

Diospyros paniculata, Dalz. — A large tree on the Sahyádris near Mavimone, and found flowering during the cold season.

Styraceæ. — Symplocos spicata, Roxb. A small tree common on the Sahyádris. Flowers during the cold season.

S. Beddomei, Clarke.—A tree found near Yellápur and doubtfully referred at Kew to this species. Flowers during the rainy season.

Oleaceæ.—Jasminum pubescens, Willd.; J. Rottlerianum, Wall.; J. flexile, Vahl.; J. arborescens, Roxb.; J. Roxburghianum, Wall. All these species of Jasminum are common, particularly J. Arborescens, throughout parts of Kánara. The first four flower during the cold season, and the last during the hot season.

Nyctanthes Arbortristis, L.—A small tree cultivated along the coast in the villages. Flowers principally during the rainy season. A dye is obtained from the orange-coloured corolla tube.

Olea dioica, Roxb.—A large evergreen tree, common in many of the forests of North Kánara. Flowers in the cold season.

Linociera malabarica, Wall.—A small evergreen tree common in the Yellápur forests of North Kánara. Flowers during the cold season, the flowers have a strong scent of ripe apples.

Appendix.

TREES AND SHRUBS.

Apocynaceæ.—Rauwolfia serpentina, Benth. A shrub with handsome white flowers, common at the beginning of the rainy season.

Vinca pussilla, Murr.—A small herb found near Belikeri. Flowers in September.

Tabernamontana Heyneana, Wall.—A middle-sized tree, common near Yellápur and elsewhere in North Kánara, flowering in the c old season. The fruit ripens in the rainy season.

Holarrhena antidysenterica, Wall.—A small trée very common in North Kánara. Flowers in the hot and rainy seasons.

Wrightia tinctoria, Br., and W. tomentosa, Roem.—Two small trees, very common in parts of Kánara along the Sahyádris, flowering in the hot season.

Ichnocarpus frutescens, Br.—A climbing shrub common in North Kánara, flowering in the cold season.

Chonemorpha macrophylla, D. Don.—An immense climber, common in North Kánara. Flowers in May and June.

Asclepiadeæ.—Hemidesmus indicus, R. Br. A twining plant, very common in North Kánara ; the root yields a kind of sarsaparilla. Flowers in the hot season.

Holostemma Rheedii, R. Br.—A twining shrub common about Kárwár during the rainy season.

Calatropis gigantea, R. Br.—A large shrub, common in dry situations in North Kánara. Flowers throughout the year.

Asclepias curassavica, L. — A herb with beautiful red and yellow flowers. Common throughout the year in North Kánara, and introduced from the West Indies.

Mitrasacme polymorpha, Br.—A small herb three to four inches high. Common near Mirján in September.

Gymnema sylvestre, R. Br.—A twining shrub common about Kárwár during the rainy season.

Tyophora asthomatica, W. & A.—A climbing plant found at Kárwár. Flowers in July.

Loganiaceæ.—Fagraea obovata, Wall. A scandent, common in the forests of North Kánara. Flowers during the rains.

Gentianaceæ.—Exacum pumilum, Gries ; E. bicolor, Roxb.; E. petiolare, Gries. All common herbs, appearing during the rainy season in North Kánara.

Hoppea fastigiata, Clarke. — A small herb common in grassy places throughout the forests of North Kánara and appears in August.

Erythraea Roxburghii, Don.—A small herb with pretty star-like flowers common in the rice-fields after the rainy season.

E. ramosissima, Pers. — A small herb common on the laterite rocks near Kumta after the rainy season.

Canscora decurrens, Dalz.; C. perfoliata, Lamk.; and C. diffusa, R. Brown. —These three species are common in North Kánara in favourable localities, flowering in the cold season.

C. decussata, Roem.—A species with winged stem and 3-nerved sesile leaves found near Yellápur. Flowers in October.

Limnanthemum cristatum, Gries.—A very handsome flowered aquatic plant with orbicular cordate leaves. Common in ponds throughout North Kánara.

Hydrophyllaceæ.—Hydrolea zeylanica, Willd. A creeping herb common in most places with deep blue flowers which appear in the cold season.

Borragineæ.—Ehretia laevis, Roxb. A small tree common in Mundgod petty division. Flowers in April.

Ehretia canarensis, Miq.—A small tree found in the evergreen forests near Yellápur. Flowers at the beginning of the rainy season.

Rhabdia lysiodes, Mart.—A shrub common along river-banks, flowering in the cold season.

Coldenia procumbens, L.—A weed common in rice fields in the cold season.

Heliotropium indicum, L.—A common herb near Yellápur and elsewhere, flowering in the hot season.

H. strigosum, Willd.—A very common rice field weed found in North Kánara.

H. marifolium, Retz.—A common diffuse herb, flowering in the hot season.

Cordia Myxa, Linn.—A small tree common throughout the district, particularly about Mundgod. Flowers in the hot season.

Cordia Wallichii.—A small tree with densely tomentose leaves. Common about Mundgod, and flowers in the hot season.

Cordia obliqua, Willd.—A small tree found near Mundgod with slightly oblique glabrous leaves, and flowering in March. Has been referred at Kew to this species.

Cynoglossum furcatum, Wall.—An erect herb, flowering during the rainy season. Common at Yellápur.

Convolvulaceæ. — Erycibe paniculata. A large climber. Common in North Kánara.

Argyreia speciosa, Sw. (Elephant Creeper).—A common climber in North Kánara. Flowers during the rainy season.

Ipomea reptans, Poir.; I. biloba, Siv.; I. angustifolia, Jacq.; I. Turpethum, Br.; I. vitifolia, Siv.; I. obscura, L, and I. digitata, L.—These and several other species are common about the forests on the Sahyádris. I. beloba, Sweet, is found on the coast growing on the sand.

Evolvulus hirsutus, Lam.—A small herb with blue flowers. Common in the rice-fields during the cold season.

Solanaceæ.—Solanum indicum, L., flowers in the cold and rainy season. S. Xanthocarpum, Willd., flowers all the year. S. verbascifolium, Linn., flowers in the rainy season. S. giganteum, Jacq., flowers in the rainy and cold seasons. S. bigeminatum, Nees, found near Yellápur and flowers during the rains. S. læve, Dunal, flowers in the rainy season. All these species are common throughout North Kánara in favourable localities.

Datura fastuosa, L.—The common *datura* plant. Flowers at different times.

Scrophularineæ.—Limnophila racemosa, Benth. This and several other species are common in North Kánara on the borders of ponds,

Vandellia crustaceæ, Benth.—An herb found near Yellápur. Flowers in June.

Striga orobanchiodes, Benth.—A common parasitic herb appearing during the rainy season.

S. Hirsuta, Benth.—An herb, flowers during the rainy season.

Centranthera Brunoniana, Bth.—A small herb found in rice fields and common in North Kánara.

Ramphicorpa longiflora, Benth.—Very common at Yellápur during the rainy season

Sopubia delphinifolia, G. Don.—An erect annual appearing during the rains in North Kánara near Yellápur. Also common in the drier climate near Dhárwár.

Bignoniaceæ.—Spathodea crispa, Wall. A middle-sized tree, with handsome flowers which appear in the hot season. All the other species found in North Kánara are mentioned above pp. 60-76. Panjanelia Rheedii is a common tree in parts of Yellápur sub-division.

Pedalineæ.—Martynia diandra, Don. An introduced plant, has run wild in various parts of the district. Flowers in the cold season.

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TREES AND SHRUBS.

Sesamum indicum, D.C.—Cultivated plant; found occasionally along roadsides, having sprung up from seeds dropped by the wayside.

Acanthaceæ.—Thunbergia fragrans, Roxb. A common climbing plant found in North Kánara. Flowers in the rainy season during October.

T. mysorênsis, Wgt.—A beautiful climber, common near the falls of Gersappa. Flowers in May.

Strobilanthes Heyneanus, D.C.; S. sessiliodes, Wgt. (variety); S. asperrimus, D.C.; S. callosus, Wall.; S. Neesianus, Wgt.; S. ciliatus, Nees. All these species of Strobilanthes are common in North Kánara. S. callosus and S. Neesianus cover immense tracts of forest as undergrowth. S. asperrimus and S. callosus flower at fixed times and after a number of years. S. sessiliodes flowers in the rainy season and yearly. S. Neesianus and S. ciliatus flower during the cold season.

Barleria involucrata, Nees.—A beautiful blue-flowered species appearing in flower during November.

B. nutans, Nees.—Found near Siddápur. Flowers in May.

Blepharis asperrima, D.C.—A very common sub-erect herb. Flowers in the hot and rainy seasons.

Gymnostachyum latifolium, T. Anders.—A shrub found in many of the North Kánara forests. Flowers in the cold season.

Acanthus ilicifolia, Juss.—A common shrub, along the banks of tidal rivers. Flowers in the rainy season (June).

Justicia montana.—A large leafed shrub found near Siddápur. Flowers in May.

Eranthemum crenulatum, Wall.—A shrub common in the forests during December.

Dædalacanthus montanus, T. Anders.—A common shrub in North Kánara. Flowers in December.

Rhinacanthus communis, D.C.—A common shrubby plant in the drier parts of North Kánara near the Dhárwár frontier. Flowers in the hot season.

Phaylopsus parviflora, Willd.—Common near Yellápur during the hot season. The flowers are very viscid.

Several species of Adhatoda and Justicia are also found, but generally cultivated as road-side trees or for their flowers.

Verbenaceæ.—Symphorema involucrata, Roxb. A climber, flowering in the hot season in North Kánara, and found in evergreen forests.

S. polyandra.—An erect spreading shrub found near Mundgod, flowering in the hot season. Not observed so far north up to the present.

Premna latifolia, Roxb.—A small tree common in North Kánara on the coast. Flowers during the hot and rainy seasons.

Premna serratifolia, Linn.—A shrub common near the coast at Belikeri. Flowers in the rainy season.

Premna sp.—A climbing shrub with regular flowers in large corymbose coloured cymes. Common throughout the forests of North Kánara, and probably a new species.

Callicarpa Wallichiania, Walp.—A small tree or large shrub, very common throughout the evergreen forests of North Kánara. Flowers in the cold season.

Clerodendron infortunatum, Linn., and C. serratum.—Both flower during the rainy season; the former is very common in North Kánara.

Avicennia officinalis, L.—A small tree with opposite coriaceous leaves. The seeds have a woolly radicle. The sea-shore at Kárwár is often strewn with these seeds carried down the Kálinadi during the monsoon. Flowers in the hot season.

Orobancheæ.—Æginetia indica. A common parasitic herb in North Kánara. Flowers in the rains.

Labiateæ.—Ocimum canum, Linn. An erect herb common in parts of North Kánara.—Flowers in the cold season.

Dysophylla tomentosa, Dalz.—A small herb common in the rice fields of the Kumta sub-division. Flowers during the cold season.

Plectranthus striatus, Bth.—A common herb appearing during the rainy season near Yellápur.

Colebrookia oppositifolia, Sm.—A common herb found on the Ghâts. Flowers during the rains.

Acrocephalus capitatus, Bth.—A small herb appearing during the rainy season. There are many other herbs belonging to this family indigenous in North Kánara, and flowering throughout the year.

Nyctagineæ. — Boerhaavia diffusa, Linn., and B. repanda, Will. Both common species in North Kánara, flowering in the rainy season.

Mirabilis jalapa, Spr., and Bougainvillea spectabilis, are ornamental garden shrubs introduced into Kánara.

Amarantaceæ.—Amarantus spinosus, Linn., and Amarantus viridis, L. Both these species are very common about Yellápur, and flower in the cold season.

Polygonaceæ.—Polygonum rivulare, Koenig; P. elegans, Roxb.; P. Chinense, Willd.; and P. Plebejium, R. Br. All these species are common herbs in North Kánara, flowering in the cold and hot seasons.

Aristolochiaceæ.—Aristolochia indica, Willd. A climbing and twining shrub common above and below the Sahyádris. Flowers in the hot and rainy seasons.

Bragantia Wallichii, R. Br.—A common plant in North Kánara.

Piperaceæ.—Piper (Wightii.) A common climbing shrub in most of the evergreen forests of North Kánara.

Myristiceæ.—Myristica laurifolia, Hf. and T. A large tree common on the Sahyádris. Yields an inferior kind of nutmeg called "rámphul." Flowers in the cold season.

Myristica corticosa, Lour. — One of the commonest evergreen trees in North Kánara. Flowers in the cold season.

Myristica malabarica, Lam. — A large tree common in the Kumta sub-division below the Sahyádris. Flowers in the cold season.

Myristica magnifica, Bedd.—A large tree on the Devimane Ghát, but probably identical with M. laurifolia, Hf. and T. Flowers in the cold season.

Laurineæ. — Cryptocarya Wightiana, Thw. A large tree, common in North Kánara. Flowers during the cold season.

Beilschmedia fagifolia, Ness. A middle-sized tree on the Sayhádris. Flowers in the hot seasons and found near Yellápur.

Actinodaphne Hookeri, D.C.—Tree common about Yellápur and flowers in the rainy season.

Litsea zeylanica, Ness.—A small tree common about Yellápur, and flowers in the cold season.

Tetranthera tomentosa, Roxb.—A common shrub or small tree in North Kánara. Flowers in the rainy season.

Several other species of this genus are common in the North Kánara forests. This genus has been included under Litsea in the "Genera Plantarum" of Bentham and Hooker.

Cassytha filiformis, Linn.—A parasitic herb with filiform stems common on trees in North Kánara. Flowers during September.

Elæagnaceæ.—Elæagnus latifolia. A climber with silvery leaves, very common in North Kánara. Flowers in November.

Loranthaceæ.—Viscum angulatum, Heyne. A leafless parasite, common on trees on the Sahyádris. Flowers in April.

Appendix.

TREES AND SHRUBS.

Loranthus Wallichianus, Schult.; L. longiflorus, Don.; and L. umbellatus, Heyne.—These are the commonest species of Loranthus found on trees on the Sahyádris of North Kánara. All flower during the hot season and also in the rainy season.

Santalaceæ.—Osyris Wightiana, Wall. A common shrub found in most parts of North Kánara, but particularly common about Kárwár. Flowers in the hot and rainy seasons.

Euphorbiaceæ.—Euphorbia Rothiana, Spr., flowers in the cold season; E. notoptera, Boiss., flowers in the cold season; E. pilulifera, L., flowers in the rainy season; E. thymifolia, Willd., flowers in the rainy hot and cold seasons; E. parviflora, Willd., flowers in the rainy hot and cold seasons; E. uniflora, Roxb., flowers in the rainy and cold seasons; and E. hirta, Willd., flowers in the rainy and hot seasons. All these herbs are common in favourable localities throughout North Kánara.

Securinega obovata, Willd.—A small tree very common in North Kánara. Flowers in the hot season.

S. Leucopyrus, Roxb.—A shrub common near Kárwár. Flowers in the hot season.

Bischoffia javanica, Bl.—A large tree not common in North Kánara, found in the Sirsi sub-division. Flowers in the cold season.

Cyclostomon macrophyllus, Bl.—A tree found near Katgal, flowering in November.

Antidesma diandra, Tulasne.—A small tree or shrub very common in North Kánara. Flowers in June.

A lanceolatum, Tulasne.—A large shrub found near Kárwár, nearly allied to A. diandra Tulasne.

A. Ghæsembilla, Gaert.—A small tree, not common. Found near Kirvatti in North Kánara. Flowers in the rainy season.

A. Menasu, Mull. Arg.—A small tree growing in the evergreen forests of the Sirsi and Siddápur sub-divisions, and flowering in the hot season.

Phyllanthus nitidus, Mull.—A small tree. Flowers in the hot season. Common on the Sayhádris.

Phyllanthus reticulatus, Poir.—A straggling shrub. Flowers in the cold season.

P. polyphyllus, Willd.—A shrub common near Kárwár. Flowers in the rainy season.

P. Juniperoides, Mull.—A shrub common along river banks. Flowers in the cold season.

P. canaranus, Mull.—A shrub common in North Kánara. Flowers in the hot season.

P. tomentosus, Mull.—A small tree flowering in the hot season.

P. Hohenakeri, Mull.—A middle-sized tree common on the Sahyádris, in flower in the cold season, and found near Yellápur in the evergreen forests.

P. simplex, Retz.—An herb. Common during the rainy season in North Kánara.

P. Niruri, Willd.—An herb. Common during the rainy season (September) in North Kánara.

P. Leschenaultii, Mull.—A climber found in North Kánara and flowers in the rainy season.

P. Neilgherrense, Wgt.—A small tree common in North Kánara and flowers in the hot season.

Briedelia stipularis, L.—A scandent shrub common in North Kánara. Flowers in the cold season.

Trewia nudiflora, L.—A common tree in North Kánara and flowers in the hot season.

Mallotus albus, Roxb.—A middle-sized tree very common in many evergreen forests. Flowers during the rainy season.

M. aureopunctatus, Dalz.—A shrub very common on the Ankola subdivision ghâts. Leaves covered with resinous dots underneath. Flowers in the cold season.

Mallotus repandus, Willd.—A climbing and scandent shrub common in the Yellápur sub-division and flowers during the rainy season.

Homonoya riparia, Lour.—A very common shrub along river-courses. Flowers in the cold and hot seasons.

H. retusa, Wgt.—This species is also very common along many rivers. Flowers in the hot season.

Blackia umbellata, Baillon.—A shrub common on the Devimane Ghát. Flowers in November.

Cleistanthus malabaricus, Mull.—A large shrub, found near the falls of Gersappa. Flowers in the cold season.

Excœcaria insignis, Royle.—A common tree about Kárwár. Flowers in the hot season.

E. agallocha, Willd.—A large shrub very common along the banks of tidal rivers in North Kánara. Floats for nets are made from the cork-like roots. The milky juice of this shrub is acrid and poisonous.

Tragia involucrata, Willd.—A twining plant covered with stinging hairs. Flowers in the rainy season.

Jatropha Curcas, Roxb.—A common shrub along road-sides, a native of Brazil.

J. glandulifera, Roxb.—A large shrub found near Kárwár. Flowers during the rains.

Crozophora plicata, Dalz.—Common herb in rice-fields near Mundgod. Flowers in the cold and hot seasons.

Melanthesa turbinata, Wgt. — A bush common in North Kánara. Flowers in the hot season.

Micrococca mercurialis, Bth.—An herb, common about Kárwár and appearing in July.

Sebastiana Chamalea, Mull. Arg.—A small plant, appearing at Kárwár during August.

Urticacæ. — Fleurya interrupta, Wgt.—A common weed about Kárwár appearing during the rains.

Elatostemma cuneatum, Wgt.—A small herb found near Yellápur. Flowers in October.

E. oppositifolium, Dalz.—Found near Katgal and flowers in September.

Celtis trinervia, Roxb. — A small or middle-sized tree, common on the Sayhádris. Flowers during the rainy and cold seasons.

Ficus cinerascens, Thw.—An immense tree growing in the North Kánara evergreens. Common in many forests above and below the Sahyádris. Fruit green.

F. oppositifolia.—A small tree very common in damp situations. Fruit green when ripe.

F. caulobotiya, Mig.—Common near Mundgod.

F. parasitca, Koenig.—A very common species, epiphytic. Fruit yellow when ripe.

Ficus Tjakela, Mig.—A large handsome tree, common in North Kánara.

F. nervosa, Roth.—A large tree common below the Sahyádris in Kumta.

F. leucocarpa, Mig.—A large tree allied to F. glomerata.

F. Mysorensis, Roth.—A very large tree with yellow sessile figs. Common in Sirsi and Yellápur.

Ficus cordifolia, Roxb.—A small tree common along the coast, also found in rocky places above the Sahyádris.

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Boehmeria malabarica, Wedd.—A shrub common on the Nilkund Ghát. Flowers in the cold season.

Debregeasia longifolia, Wedd.—A small tree common in the Kumta and Siddápur sub-divisions. Flowers in the cold season.

Pouzolzia pentandra, Bennet.—A small shrub, common near Palla. Flowers in the cold season.

Pouzolzia stocksii, Wight. — A small herb common near Kárwár, appearing during the rainy season.

Morus indica, L.—An introduced species found in gardens near Kárwár. Flowers during the rainy season.

Gnetaceae.—Gnetum scandens, Roxb. A scandent shrub common in the North Kánara forests. Flowers during the cold season.

MONACOTYLADONES : — *Smilaceae.* — Smilax indica, Vitm. and Smilax oppositifolia, L. Both these climbers are common about Kárwár and other places during the rainy season.

Asparagineæ. — Asparagus racemosus, Roxb. A common climber in North Kánara. Flowers in the rainy and cold seasons.

Dioscorineæ. — Dioscorea dæmona, Roxb.; D. versicolor, Ham.; and D. triphylla Linn. All common species, appearing during the rainy season.

Aponogeteae. — Aponogetum monostachyum, Linn. A plant common in ponds near Pála and flowering in the cold season.

Alismaceæ.—Sagittaria triandra. Common in ponds during the cold season.

Pontederiaceæ.—Pontederia vaginalis, Lenn. A pretty blue-flowered species common near water in North Kánara. Flowers in the hot and cold seasons.

Liliaceæ.—Gloriosa superba, Lam. An extensive climber of North Kánara, appearing during the rainy season.

Iphegenia indica.—A small herb appearing during the rainy season at Yellápur and Kárwár.

Aroideæ.—Pothos scandens, Linn. A common climbing shrub throughout North Kánara. Flowers in the cold season.

Scindapsus pertusus, Schott.—A climber with thick stems, not so common as Pothos but found in many evergreen forests of North Kánara. Flowers in the cold season.

Arisaema neglectum, Schott, and A. Murrayii, Dalz. — Both species common at the beginning of the rainy season in North Kánara.

Amorphophallus campanulatus, Bl. — Found at the beginning of the rainy season in damp situations, but rare; also cultivated.

Ariopsis peltata, Grah.—A beautiful small plant with a simple peltate leaf. Very common on rocks and in other situations along the coast and appears during June and July.

Remusatia vivipara, Schott.—Common on trees on the Sahyádris, not often seen in flower.

Theriophorum Dalzellii, Schott.—Common in Kárwár during July.

Xyrideæ.—Xyris schaenoides, Mart. A small herb common in the rice-fields at the end of the rainy and cold seasons. This species may turn out to be simply X. indica of Linn.

Orchidaceæ.—Oberonia recurva, Lind. A minute orchid on trees of the Sahyádris, flowering in the cold season.

Dendrobium macraei, Linn.—A large orchid common on trees on the ghâts. Flowers at the beginning of the rainy season.

Cirropetalum fimbriatum, Hook.—The umbrella orchid common on the Sahyádris near Supa. Flowers in the hot season.

Micropera maculata, Dalz.—Found on trees near Supa and flowers in the hot season.

Saccolabium guttatum, Lind. — Common on trees on the ghâts, and flowers just before the rainy season.

Saccolabium papillosum, Lind.—A fine but most common species growing on mangoe and other trees in Dhárwár and Kánara. Flowers before the rainy season.

Habenaria rotundifolia, Lind.; H. modesta, Dalz.; H. longicalcarata, A. Rich; H. marginata and H. elata, Dalz. and Habenaria, Sp.—All common in Kánara during the rainy season. Ground orchids.

Planthera Susanneæ, Lind.—A ground orchid common near Yellápur a the end of the rainy season (September).

Musaceæ.—Musa sapientum, Wild., or Wild Plantain.—Wild in North Kánara, apparently escaped from cultivation.

M. superba, Roxb. — A truly wild species growing on the Sahyádris. Flowers during the rainy season.

Zingiberaceæ.—Globa marantina, L. A yellow flowered species common throughout North Kanara. Flowers in August.

Zinziber Cassumunar, Roxb.—Common in the North Kánara forests during the rainy season.

Z. Macrostachyum, Dalz.—A red stemmed plant common in the North Kánara forests during the rainy season.

Alpinia Allughas, Roscoe.—This and two other species of the genus are common in North Kánara during the rainy season.

Costus speciosus, Smith.—A very common and handsome species flowering during the rainy season in the North Kánara forests.

Curcuma zeodaria, Roxb.—Appears just before the rainy season.

C. amada, Roxb.—This species is found in the Yellápur sub-division forests but nowhere abundant. Flowers in June.

Amaryllidaceæ.—Crinum asiaticum, L. Common in the Pála forests, flowering in June.

Hypoxidaceæ—Curculigo malabarica, Wgt. A common herb during the rainy season in North Kánara.

Taccaceæ.—Tacca pinnatifida, Forst.—A common herb appearing during the rainy season.

Hydrocharidaceæ. — Ottelia indica, Planch. Common in some ponds near Pála and flowers in the cold season.

Palmæ. — Phœnix sylvestris, Roxb. Tree thirty to forty feet high, found near Pála and very common in the Dhárwár district, where the wood is much used for building purposes. Flowers during the cold season.

P. farinifera, Rox.—A small always short-stemmed species with slender leaves and flowering in the hot season. The fruit which is edible ripens in May and turns quite black.

Calamus rotang, Willd.—The common cane of North Kánara. Flowers in the rainy and cold season.

Calamus, Sp.—The nagbet of North Kánara. An undescribed species differing in many respects from C. rotang of Willd.

Saguerus Wightii.—A most beautiful palm growing on the Sahyádris in the Ankola sub-division and also abundant on the Nilkund Ghát. Flowers the cold season; fruit ripens in June.

Pandanaceæ.—Pandanus furcatus, Roxb. and P. odoratissimus, Linn. Both these srew palms are common in North Kánara.

Eriocauloneæ.—E. sexangulare, Linn.; E. Wallichianum, Mart; E. acranthemum, Mart.; and E. pygmæum, Dalz.—These species are common throughout North Kánara in rice-fields and damp places.

E. Dalzellii, Koeris.—Found in water near Belikeri during the rains.

Cyperaceæ.—Many species of Cyperus and Fimbristylis.

Graminaceæ.—Many genera and species.

Appendix.

TREES AND SHRUBS.

Filices.—Lygodium pinnatifidum, Sw.; L. microphyllum, Spr.; Osmunda regalis, L.; Cheilanthus tenuifolia, Sw.; Davallia tenuifolia, Sw.; Alsophila glabra, Hk.; Angiopteris erecta, Hoffm.; Belchnum orientale, L.; Acrostichum virens, Wall.; Adiantum caudatum, L.; Nephrodium ciliatum, C.B.C.; Gleichenia dichotoma, Willd.; and Aspidium polymorphum, Wall. All these and several other ferns are common in favourable localities in North Kánara.

Ophioglossum nudicaule, L.f.—This small plant is found near Kárwár during July.

Lycopodiaceæ.—Lycopodium cernecum, L. A common species of North Kánara.

GAME BIRDS.[1]

GAME BIRDS.

The game and other birds which are common over Western India and are killed by sportsmen for the table, with a few exceptions, are fairly represented in Kánara. Of birds which are found only in forest tracts, and afford excellent sport if driven in the way coverts are driven for pheasants in England, there are the Peafowl, Pavo cristatus; the Grey Junglefowl, Gallus sonnerati; and the Spurfowl, Galloperdix spadiceus. The laying season of all three is from March to June. Their nests are formed on the ground, and as many as ten eggs have been found in a single nest. The young birds are excellent eating, especially during the cold weather months.

Of PARTRIDGES there are two kinds, the Painted, Francolinus pictus, which is found in fair numbers over the grassy and bushy lands along the more open parts of the forests bordering on Dhárwár from Haliyál to Mundgod and Pála. They are also occasionally found on the grassy slopes of the Sahyádris where the earlier ash-manure tillage has destroyed the forest. The Grey Partridge, Ortygornis ponticeriana, is common on the outskirts of the forests both above and below the Sahyádris. Both kinds make their nests on the ground and lay five to six eggs which are hatched during the early rains.

SAND GROUSE, Pterocles, Bustard, Eupodotis edwardsii, and the Demoiselle Crane, Anthropoides virgo, though common in Dhárwár, are unknown in Kánara. On the other hand the Florikin, Sypheotides aurita, occasionally occurs along the eastern border of the district and on the grassy slopes of the Sahyádris. It is a cold weather visitant and is not known to breed in Kánara.

Of QUAIL there are many kinds. The Jungle Bush Quail, Perdicula asiatica; the Rock Bush Quail, Perdicula argoonda; and the Painted Bush Quail, Microperdix erythrorhynca, are found all the year round; and the Large Grey Quail, Coturnix communis, and the Rain Quail, Coturnix coromandelica, arrive with the close of the rains. The grey quail perhaps comes later and certainly leaves very much earlier than the rain quail which often remains till driven out by the south-west rains in June. Rain quail are known to breed in Kánara in October and even later, and the young broods are often unable to get on the wing before the end of November, and run even into December when eggs are sometimes seen. Both the Large Grey and the Rain-Quail come in varying, but generally in considerable numbers. They spread over the fields and grassy lands in the more

[1] Contributed by Colonel W. Peyton, Conservator of Forests.

open parts of the forests bordering on Dhárwár, and between Haliyál, Mundgod and Pála. Occasionally excellent bags of quail may be made; four guns are known to have killed 113 couple in one day about Haliyál. The Large Grey is not nearly so common as the Rain Quail, and it is both better shooting and better eating. Except a stray bird, neither the Grey nor the Rain Quail is found below the Sahyádris. The Blackbreasted Bustard Quail, Turnix taigoor, is also found in great numbers in grassy forest patches. They remain in bevies of considerable numbers through the hot weather months until driven out by the south-west rains. The absence of the hind toes make this quail remarkable. The Button Quail, Turnix dussumieri, is also common in the more open parts and remains throughout the year.

Of PLOVERS, both the Grey, Squatarola helvetica, and the Golden, Charadrius fulvus, are found in flocks on the coast along tidal creeks and backwaters. The golden plover is rare. They come with the cold weather and leave at its close. Both varieties of plover are excellent eating. Their flight is, at times, exceedingly strong and rapid, and to rake a passing flock the shot must be fired a little ahead of the birds. The Redwattled Lapwing, Lobivanellus indicus, and the Yellowwattled Lapwing, Lobipluia malabarica, are both common, especially the Redwattled Lapwing which is seen almost everywhere. The Stone Plover, Esacus recurvirostris, and Œdicnemus crepitans are both common, the former on the coast and inland along the ponds and rivers; and the latter, under the name of the Bastard Florikin, in dry parts among bushes and in low grass. They are not particularly good eating. It is doubtful whether the Stone Plover remains in the district; the Bastard Florikin assuredly remains and breeds during the hot months. There are also the large and lesser Sand Plovers, Ægialitis geoffroyi and mongola, the Kentish Ringed and Indian Small Ringed Plovers, Ægialitis cantiana and curonicus, which are abundant both on the coast and along the ponds and rivers above the Sahyádris.

Of SNIPE, the Common, Gallinago gallinaria; the Pintailed, Gallinago sthenura; the Jack, Gallinago gallinula; and the Painted, Rynchœa bengalensis, are found in fair numbers both above and below the Sahyádris. Along the tidal creeks and backwaters they are specially numerous. Up the Kálinadi river from Kárwár, the Gangávali river from Kumta, and the Gersappa river from Honávar fair bags may be made. The largest known to one gun is twenty-seven couple. Snipe do not begin to arrive in Kánara before the middle of October, and they leave about the end of February. A few remain all the year round and breed in the forest. Snipe shooting is the cream of small game shooting, and a wonderful deal of fatiguing walking and wading is done without knowing it if the birds are in plenty and lie fairly close. Snipe should be shot walking with the wind, as on rising the birds almost always turn to windward. The Wood Cock is almost unknown to many in Kánara, but four have been flushed at odd times in the cold weather when following other game. Three of the four were killed. Of other wader birds which come with the cold weather, there is the Curlew, Numenius arquata, which is found mostly along tidal creeks and backwaters, and the Whimbrel, Numenius phœopus, the Ruff, Philomachus pugnax, and the Green and Red Shanks, Totanus glottis and calidris, which are also mostly tidal creek birds, but are sometimes found on the ponds and rivers above the Sahyádris. They are cold weather visitants and very indifferent eating. The White Ibis, Threskiornis melanocephalus, and the Black Ibis, Geronticus papillosus, are also seen in considerable numbers above and sparingly below the Sahyádris. The flesh of both is coarse and unfit for the table.

Appendix.

GAME BIRDS.

Of COOTS, both the Purple, Porphyrio poliocephalus, and the Bald Coot, Fulica atra, are common on all the larger ponds above the Sahyádris, and the Water Hen, Gallinula chloropus, and the Rails, Porzana and Rallus, are common both in upland and lowland Kánara.

Of GEESE there is the Blackbacked Goose, Sarcidiornis melanonotus, the only one known, and the Goose-teal or Cotton bird, Nettopus coromandelianus.

Of DUCK and TEAL there is a large variety which come with the cold weather in November and stay till February, and some into March. Among those found on the ponds along the eastern border touching Dhárwár, and which afford fair sport in years of average or of plentiful rainfall, are, the Spotted Billed or Grey Duck, Anas pœcilorhyncha; the Pintail, Dañla acuta; the Shoveller, Spatula clypeata; the Gadwall, Chaulelasmus streperus, the Redhead Pochard, Fuligula ferina; the Widgeon, Mareca penelope; the Common Teal, Querquedula crecca, the Bluewinged Teal, Querquedula circia; and the Whistling Teal, Dendrocygna javanica. The Little Grebe, Podiceps minor, is also everywhere common; but the Ruddy Shieldrake or Brâhmani Duck, Casarca rutila, is only occasionally seen and occurs more often on the upland rivers and backwaters than on the upland ponds.